

COST ESTIMATE SUMMARY

Description	Total Cost ^(a)	Lower Range (-30%)	Upper Range (+50%)
ALTERNATIVE S-1: NO ACTION	\$0	\$ -	\$ -
ALTERNATIVE S-2: EXCAVATION AND OFFSITE DISPOSAL	\$ 3,356,649.95	\$ 2,349,654.97	\$ 5,034,974.93
ALTERNATIVE S-3: EXCAVATION AND ONSITE CONTAINMENT REPOSITORY	\$ 6,939,557.49	\$ 4,857,690.24	\$ 10,409,336.24
ALTERNATIVE S-4: EXCAVATION, ONSITE CONSOLIDATION, AND CAPPING	\$ 5,157,146.74	\$ 3,610,002.72	\$ 7,735,720.11
Notes: (a) The capital and operations and maintenance costs are rounded up to the nearest thousand Estimate not intended for construction Expected accuracy +50%/-30%			

ALTERNATIVE S-1: NO ACTION

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
TOTAL - CAPITAL COST	\$0	

Notes:

(a) Sources expressed as a numerical value were obtained



ALTERNATIVE S-2: EXCAVATION AND OFFSITE DISPOSAL

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization		
	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,558,596.79	RACER
Off-site Transportation and Waste Disposal - Non-Hazardous Waste		
Transportation and disposal	\$ 1,437,606.10	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 121,821.57	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
TOTAL - CAPITAL COST	\$3,356,649.95	
TOTAL - PRESENT WORTH ^(d)	\$3,356,649.95	RACER

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied



ALTERNATIVE S-3: EXCAVATION AND ONSITE DISPOSAL

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization		
	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,558,596.79	RACER
Capping		
RCRA subtitle D designed containment cell	\$ 4,063,058.28	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 121,821.57	RACER
Groundwater Monitoring Wells		
10 wells, installed to a depth of 15ft, 2in PVC pipe	\$ 36,435.31	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
Administrative Land Use Controls		
	\$ 106,479.89	RACER
TOTAL - CAPITAL COST	\$ 6,125,017.34	
O&M COST		
Groundwater Monitoring		
10 wells, sampled annually	\$ 726,243.00	First year \$55,876.51 Out Years \$23,116 RACER
Five-Year Reviews		
Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.	\$ 88,297.00	Per Five Year \$14,716 RACER
TOTAL - O&M^(b)	\$ 814,540.00	
TOTAL - MARKED-UP COST^(c)	\$ 6,939,557.49	
TOTAL - PRESENT WORTH^(d)	\$ 6,596,518.88	

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied

ALTERNATIVE S-4: SOIL CONSOLIDATION AND ONSITE CAPPING

Description	Total Cost	Data Source ^(a)
CAPITAL COST		
Mobilization/Demobilization		
	\$ 184,616.11	RACER
Clear and Grub		
To include brush and tree clearing & grubbing, cut & chip light trees, to 12 inch diameter	\$ 13,624.55	RACER
Excavation		
Excavation, including confirmation sampling and backfill	\$ 1,558,596.79	RACER
Capping		
Capping	\$ 2,280,647.53	RACER
Cleanup and Landscaping		
Seeding and Site restoration	\$ 121,821.57	RACER
Groundwater Monitoring Wells		
10 wells, installed to a depth of 15ft, 2in PVC pipe	\$ 36,435.31	RACER
Site Close-out Documentation		
	\$ 40,384.84	RACER
Administrative Land Use Controls		
	\$ 106,479.89	RACER
TOTAL - CAPITAL COST	\$ 4,342,606.74	
O&M COST		
Groundwater Monitoring		
10 wells, sampled annually	\$ 726,243.00	First year \$55,876.51 Out Years \$23,116 RACER
Five-Year Reviews		
Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.	\$ 88,297.00	Per Five Year \$14,716 RACER
TOTAL - O&M^(b)	\$ 814,540.00	
TOTAL - MARKED-UP COST^(c)	\$ 5,157,146.74	
TOTAL - PRESENT WORTH^(d)	\$ 4,814,108.28	

Notes:

(a) Sources expressed as a numerical value were obtained from the following source: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.

(b) Total O&M costs for 30 years with Markup and with no Discount Rate applied

(c) Total Capital and O&M costs for 30 years with Markup and with no Discount Rate applied

(d) Total Capital and O&M costs for 30 years with Markup and Discount Rate applied

SUMMARY OF ASSUMPTIONS

Technology
CAPITAL COST Mobilization/Demobilization 10 person crew for 120 days Clear and Grub Clear 3 Acres of Dry Material To include brush of medium density Tree clearing, cut & chip light trees, to 12 inch diameter Grubbing Depth 6 inches, bulk factor 1.2 Excavation Excavation of 34,477 cy of soil (at 2 ft depth), Sand-Silt/Sand-Clay Mix Existing Cover Soil/Gravel Replacement Cover Soil/Seed Backfill Haul Distance 10 miles Confirmation Sampling 200 sample points; Metals and SVOC Analysis Capping - Alternative 3 RCRA Non-Hazardous Waste Cap - 10.7 acres, side slope 3:1 Top Cover of 6 in of Vegetation Protection Layer 12 in offsite soil/clay Impervious Layer 40 mil HDPE Soil Layer 18 in common fill Foundation layer 12 in offsite soil/clay Drainage geotextiles, non-woven Capping - Alternative 4 Dermal cover - 10.7 acres, side slope 3:1 Top Cover of 6 in of Vegetation Foundation layer 12 in offsite soil/clay Drainage geotextiles, non-woven Cleanup and Landscaping 10.5 Acre for cleanup and landscaping Seeding and Site restoration Groundwater Monitoring Wells 10 wells, installed to a depth of 15ft, 2in Schedule 80 PVC pipe Site Close-out Documentation Includes (1) Meeting, no travel

Draft and Final Work Plans

Draft, Draft Final and Final Close-out Report and Decision Document

O&M COST**Groundwater Monitoring**

10 wells, sampled annually, 1 Field Duplicate, 1 Rinse Blank, 1 Matrix Spike/Matrix Duplicate; Metals and SVOC Analysis

Administrative Land Use Controls

Include Planning Documents and Implementation; LUC Implementation Plan of Low Complexity

(1) Planning Meeting with no travel

Five-Year Reviews

Includes six reviews, one review every five years for 30 years. Includes document review, site inspection and report.

Notes:

(a) Assumptions were inputted into: RACER ®, 2017, Version 11.4.63.0. Pricing: Year 2021.



Backup Worksheet - O&M
Costs calculated using a real discount rate of 7% - 2019 rate from the OMB circular A-94.
Costs include 7% Markup for Contingency and Fees

Alt 1		Alt2				Alt3				Alt4							
No Action		Five Year Reviews				Monitoring and Five Year Review				Monitoring and Five Year Review							
FV		PV	Time	FV	PV	Time	FV	PV	Time	FV	PV	Time					
	\$ -	1		\$ -	1		\$	55,877	\$	52,221	1	\$	55,877	\$	52,221	1	
	\$ -	2		\$ -	2		\$	23,116	\$	20,190	2	\$	23,116	\$	20,190	2	
	\$ -	3		\$ -	3		\$	23,116	\$	18,870	3	\$	23,116	\$	18,870	3	
	\$ -	4		\$ -	4		\$	23,116	\$	17,635	4	\$	23,116	\$	17,635	4	
	\$ -	5	\$	14,716	\$	10,492	5	\$	37,832	\$	26,974	5	\$	37,832	\$	26,974	5
	\$ -	6			\$ -	6		\$	23,116	\$	15,403	6	\$	23,116	\$	15,403	6
	\$ -	7			\$ -	7		\$	23,116	\$	14,395	7	\$	23,116	\$	14,395	7
	\$ -	8			\$ -	8		\$	23,116	\$	13,454	8	\$	23,116	\$	13,454	8
	\$ -	9			\$ -	9		\$	23,116	\$	12,574	9	\$	23,116	\$	12,574	9
	\$ -	10	\$	14,716	\$	7,481	10	\$	37,832	\$	19,232	10	\$	37,832	\$	19,232	10
	\$ -	11			\$ -	11		\$	23,116	\$	15,833	11	\$	23,116	\$	15,833	11
	\$ -	12			\$ -	12		\$	23,116	\$	15,298	12	\$	23,116	\$	15,298	12
	\$ -	13			\$ -	13		\$	23,116	\$	14,780	13	\$	23,116	\$	14,780	13
	\$ -	14			\$ -	14		\$	23,116	\$	14,281	14	\$	23,116	\$	14,281	14
	\$ -	15	\$	14,716	\$	5,334	15	\$	37,832	\$	22,582	15	\$	37,832	\$	22,582	15
	\$ -	16			\$ -	16		\$	23,116	\$	13,331	16	\$	23,116	\$	13,331	16
	\$ -	17			\$ -	17		\$	23,116	\$	12,880	17	\$	23,116	\$	12,880	17
	\$ -	18			\$ -	18		\$	23,116	\$	12,445	18	\$	23,116	\$	12,445	18
	\$ -	19			\$ -	19		\$	23,116	\$	12,024	19	\$	23,116	\$	12,024	19
	\$ -	20	\$	14,716	\$	3,803	20	\$	37,832	\$	19,013	20	\$	37,832	\$	19,013	20
	\$ -	21			\$ -	21		\$	23,116	\$	11,224	21	\$	23,116	\$	11,224	21
	\$ -	22			\$ -	22		\$	23,116	\$	10,845	22	\$	23,116	\$	10,845	22
	\$ -	23			\$ -	23		\$	23,116	\$	10,478	23	\$	23,116	\$	10,478	23
	\$ -	24			\$ -	24		\$	23,116	\$	10,124	24	\$	23,116	\$	10,124	24
	\$ -	25	\$	14,716	\$	2,711	25	\$	37,832	\$	16,008	25	\$	37,832	\$	16,008	25
	\$ -	26			\$ -	26		\$	23,116	\$	9,451	26	\$	23,116	\$	9,451	26
	\$ -	27			\$ -	27		\$	23,116	\$	9,131	27	\$	23,116	\$	9,131	27
	\$ -	28			\$ -	28		\$	23,116	\$	8,822	28	\$	23,116	\$	8,822	28
	\$ -	29			\$ -	29		\$	23,116	\$	8,524	29	\$	23,116	\$	8,524	29
	\$ -	30	\$	14,716	\$	1,933	30	\$	37,832	\$	13,479	30	\$	37,832	\$	13,479	30
	\$ -				\$	31,754			\$	471,502				\$	471,502		